

LUNA MAPS, LLC.

BLUE SANDBOXES

A Boutique Playbook for Blue Innovation, Regulation & Place-Based Economic Growth



FROM REGULATION ○ EXPERIMENTATION ○ TO SCALE

LUNA MAPS | BLUE SANDBOX PLAYBOOK

A practical framework for national governments, port authorities, marina districts, communities, innovators and investors to create safe, legally enabled environments for testing and scaling Blue Economy solutions
by Luna Maps, LLC. .

Luna Maps, LLC.

Blue Sandboxes – Our Why:



A successful Sandbox should not only answer “Can this technology work?” It should answer “Can this technology work here, under our national laws, safely, with community value—and can we scale it mindfully?” - **Luna Maps, LLC.**

I. WHY BLUE SANDBOXES?

A Blue Sandbox is a designated geographic and regulatory environment where new ocean technologies, services and business models can be tested under clear rules, defined safety conditions and measurable public-interest objectives.

The Sandbox is not simply a test site. It is, in fact, an institutional bridge between regulation and commercialization—allowing governments and waterfront authorities to learn alongside innovators while protecting people, infrastructure and marine ecosystems.

THE LUNA MAPS, LLC. , SANDBOX



Given the gap in Regulatory Affairs in BlueTech, Luna Maps, LLC. breaks down the concept and architecture of Blue Sandboxes.

A Blue Sandbox is like LEGOs. It operates interwoven connecting in such capacities:

(A) RULE OF LAW + (B) PLACE +(C) TECHNOLOGY + (D)ECOSYSTEM+
(E)HIGHER BLUE CAPACITIES TO VENTURE CAPITAL.

Local/Global Venture Capital

Rule of Law creates permission to test new blue technologies. With ISO Safety Standards and creating an opportunity for governments to **shape** a new **Blue Economy**.

Place [Island or Nation] creates the access– extended to startups.

Technology creates possibility.

Community creates demand, legitimacy.

Data creates the evidence.

For Venture Capital to flow into the Startups and Ecosystem.

Creating a sustainable Economies of Scale.

II. THE BLUE SANDBOX MODEL

The model is designed to make innovation governable. Each layer answers a different question and together they create the operating conditions required for responsible experimentation.

A Blue Sandbox Stack of Safe Experimentation and Responsible AI

Rule of Law –defining authority, permissions, liability and predictable operating conditions.

Safety Standards– of ISO, to protect people, vessels, infrastructure, data and ecosystems.

Place– Defining the geographic boundaries and physical operating environment i.e. Marine Protected Areas, EEZs

Technology –Enabling a controlled testing, demonstration and validation space, terrain¹.

Stakeholders– Coordinating government, port authorities, marinas, industry, research and community.

Communities & Blue Ecosystems – Creating an opportunity for local jobs, local workforce, SME participation, education and economic value.

Data–Measurement of technical, environmental, economic and social performance (ESGs)²

Capital –Creating the Venture Capital pathways for these companies to have procurement, investment and commercial scale at the **national and global markets**

¹ In sandboxes, it is only these particular “sites” or ports that can allow such hi powered technologies to be tested. It is granted permission in test stage to understand the efficacy of the technology, the potential impact of the technology being applied, and an opportunity for public and private to bridge cohesively.

² Governments who honor an ESG, Risk/Safety Standard Measurement Assessment will be the true champions of the Blue Economy. They will be creating a safe terrain towards the inception of the Blue Economy

III. THE 8 BLUE SANDBOX LAWS

Before a Sandbox becomes operational, Luna Maps, LLC. shares there is eight foundational legal pillars that should be addressed. These have been established through legal research and are deliberately designed as a **practical checklist for governments and waterfront authorities.**

01 | AUTHORITY

Establish the legal authority to operate the Sandbox, defining jurisdictions, identifying the administrator for authorization, clarifying sandbox decision rights and creating an appeal or review mechanism for the technologies

02 | SAFETY

Setting requirements and ISO Standards for navigation, human safety, emergency response, cybersecurity, blue technology equipment, insurance, incident reporting and operational risk. Through the UN Digital Development Goals and the principles of Responsible AI

Human-Centered	AI serves people, rights, dignity, and human agency.
Fair & Inclusive	Designed to reduce bias, discrimination, and exclusion.
Transparent —	AI decisions and systems are explainable and understandable.
Accountable —	Clear responsibility exists for AI outcomes and impacts.
Safe & Secure	Systems are robust, reliable, and protected from misuse.
Privacy-Preserving —	Personal data is protected throughout the AI lifecycle.
Sustainable	AI considers environmental, social, and long-term impacts.
Governable	AI operates within appropriate laws, standards,

	oversight, and institutional controls.
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03 | ACCESS

Create a transparent entry pathway defining who can participate, what may be tested, where, for how long and under what conditions.

04 | DATA

Define ownership, access, confidentiality, sharing, cybersecurity and responsible use of ocean, sensor technologies, vessel, environmental and AI-generated data.

05 | ENVIRONMENT

Establish ecological safeguards for marine habitats, water quality, seabed disturbance, species, noise, waste, emissions and restoration.

06 | LIABILITY

Allocate responsibility among government, *the* sandbox operator, port or marina, technology provider and operator; addressing insurance and third-party claims. I.e. great platform for a **digital platform on Blue Technologies management**

07 | PROCUREMENT & SCALE

Create a pathway from successful pilot to procurement, Public Private Partnerships, infrastructure deployment, investment, commercialization and export.

08 | COMMUNITY BENEFIT

Setting allocated expectations for local employment in the new **workforce**, further workforce development, SME participation, education, entrepreneurship, local procurement and community consultation

IV. STAKEHOLDER ENGAGEMENT³

The Sandbox should operate as a multi-stakeholder compact rather than as a standalone government program. **Each participant receives a defined role, decision right and value proposition.** This can ensure all authorities and stakeholders are playing an equal part in activating the Sandbox and have clear roles and responsibilities.

STAKEHOLDER PRIMARY ROLES ⁴

National Government Policy regulation, national economic strategy and public-interest
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³ In many ways, this always comes **first**. The other aspects of the Sandbox is good readiness for countries and islands to adopt, know before engaging these stakeholders. Bring people around the law to drive the new laws and responsible AI systems.

⁴ It depends highly on the national government, regional government, yet the innovation leaders behind the stakeholder engagement have a strong understanding of the importance of collaboration towards any new dimension of a new modern economy.

oversight.

Port / Marina Authority | Physical operations, access, safety, infrastructure and waterfront coordination. Sandbox Operator Ecosystem intelligence, coordination, applications, monitoring and performance management. Industry Technology, commercial demand, pilots and market validation.

Research Institutions Science | testing, technical validation and workforce development.

Community Local knowledge | , social license, workforce and community benefit.

Investors / Finance Capital | commercialization pathways and scale.

THE GOVERNANCE QUESTION STACK

Who has the marina authority? Who operates the place? Who carries risk? Who manages risk? Who benefits? Who decides whether a pilot scales?

V. PORT & MARINA BAY MODEL

Ports and marina districts are natural physical platforms for Blue Sandboxes because they already concentrate a significant amount on the maritime traffic, infrastructure, operators, logistics, energy, waterfront access and commercial activity **already on the water**.

The objective is to turn existing waterfront infrastructure into a **controlled environment for Blue innovation**—without compromising core maritime operations. The controlled dimension is for the **responsible ai** capacities ensuring there is strong

Infrastructure: berthing, test areas, connectivity, energy, water, workshops and monitoring. **Operations:** vessel movements, safety protocols, access management, testing schedules and emergency response.

Commercial Gateway: connections to shipping, tourism, fisheries, maritime services, hospitality, procurement and investors.

Luna Maps, LLC believes having this model will create significant blue ripple effects for the economy in both attracting investment and blue innovation.

Outcome: Testbed → Marketplace → Investment Platform → Blue Innovation Hub

VI. COMMUNITY DEVELOPMENT

A Blue Sandbox should create community development and deep local value. Community development is therefore a formal operating pillar—the most important. It is the heart and the soul of the Blue Economy. It is the nucleus of the **capacity** of leading a Blue Economy.

Community Development should be seen as a top **three asset** in the development of the Sandbox. The levels of public policy and private sector investment will go obsolete without a community.

As many know in global and sustainable development, this particular Asset, let's call it, **(y)** often has an intangible dimension. For Governments and Port Authorities deeply committed to a Blue Renaissance, they need to see this as **just as critical** towards lifting 100 Million in Investments.

The Blue Economy paves the way forward for the Sandbox to contribute to the National Economy. We extend at Luna Maps, LLC. a **Community Development Blue Moonshot**. When you engage consultants, firms, private sector, startups, venture capital, university and international partnerships you can get some remarkable **national intangible economic development and capacity building**.

Here is Luna Maps, LLC's moonshot on what a **high conglomerate Blue Ecosystem** looks like taking Luna Maps, LLC's ecosystem expertise, Blue Economy market review (i.e. Rhode Island, Massachusetts, San Diego) and Michael Porter and Mercedes Delgado's conceptions on Conglomerate Economies in Entrepreneurship from their research Institute of Strategy and Competitiveness | Harvard Business School.

BLUE JOBS Training → certification → employment

BLUE SMEs Local suppliers → procurement → business growth

BLUE EDUCATION Schools → universities → research → talent

BLUE ENTREPRENEURSHIP Local founders → Sandbox access → commercialization

BLUE TOURISM Waterfront innovation → visitor experience → destination development

Consider it the **share of Sandbox economic activity retained locally** through employment, procurement, entrepreneurship and supplier development.

VII. THE OPERATING CYCLE

Every Blue Sandbox should follow a repeatable cycle that moves from ecosystem intelligence to lawful experimentation and ultimately to scale.

**MAP → DESIGN → AUTHORIZE → TEST → MEASURE →
VALIDATE → PROCURE → SCALE**

01. MAP — Map regulation, infrastructure, stakeholders, assets, risks and opportunities.

02. DESIGN — Define the geographic footprint, governance model and operating conditions.

03. AUTHORIZE — Establish legal permissions, safety requirements and application pathways.

04. TEST — Admit selected companies and technologies under controlled conditions.

05. MEASURE — Collect technical, economic, environmental and community evidence.

06. VALIDATE — Determine whether the solution is safe, viable and scalable.

07. PROCURE — Connect successful pilots to public or private buyers.

08. SCALE — Expand deployment domestically, regionally or internationally.

VIII. THE LUNA MAPS BLUE ECOSYSTEM MAP

The Sandbox begins with a map. Luna Maps uses place-based ecosystem intelligence that can help make the regulatory, physical, economic and community conditions visible in one seamless view — A Map.

01 | Regulatory Map

Who regulates what? Which permissions, licenses, standards and jurisdictions apply?

02 | Physical Map

Where can innovation safely occur? What are the geographic boundaries and exclusion zones?

03 | Infrastructure Map

Where are ports, marinas, energy, connectivity, laboratories, workshops and logistics assets?

04 | Innovation Map

Which startups, universities, researchers, technologies and pilots are active?

05 | Economic Map

Which industries, SMEs, investors, buyers and procurement opportunities surround the Sandbox?

06 | Community Map

Who lives and works nearby? How can they be involved in deciding the future of the Blue Economy? Where are workforce, education, entrepreneurship and local development opportunities?

VIII. BLUE SANDBOX SCORECARD, BLUE DIAGNOSTICS

Each pilot can be assessed against eight dimensions to create a simple decision framework for government and Sandbox operators. Luna Maps, LLC. has built prototypes on **Scorecard and Dashboards** for Governments to consider the **innovation management of** the Blue Technologies.

Upon a 2:1, 1:1 with Luna Maps, LLC. demos can be extended.

It compresses Blue ISO Standards and MIT's Risk Assessment Repository.

Please reach out to for a demo or co designed, customized Management Dashboard::

Luna Maps, LLC.

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Blue Sandbox Consideration – A Nation's Why:



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